

CLAIMS

What is claimed is:

1. An abrasion-resistant tubular sleeve comprising:
a monofilament yarn forming a first weft in a fabric cloth;
a first multifilament yarn forming a second weft in said fabric cloth; and
a set of knitted warps including a plurality of second multifilament yarns forming a chain stitch lap in said fabric cloth;
wherein said fabric cloth is heat set into a resilient tubular sleeve.
2. The abrasion-resistant tubular sleeve of claim 1 wherein said monofilament yarn is selected from the group consisting of a polyester yarn, a polyamide yarn, a polyethylene terephthalate yarn, a polyphenylene sulfide yarn, a polyphenylene sulfide with Teflon yarn and a polyester over polyamide yarn.
3. The abrasion-resistant tubular sleeve of claim 2 wherein said monofilament yarn comprises a Nylon 6/6 yarn having a diameter in the range of 7 to 15 mils.
4. The abrasion-resistant tubular sleeve of claim 1 wherein said first multifilament yarn comprises a textured multifilament yarn.

5. The abrasion-resistant tubular sleeve of claim 4 wherein said textured multifilament is selected from the group consisting of a polyamide yarn, a polyester yarn, a Nomex[®]/Basofil[®] blend yarn and a stainless steel/polyester blend yarn.

6. The abrasion-resistant tubular sleeve of claim 5 wherein said first multifilament yarn comprises a Nylon 6/6 yarn having a denier in the range of about 1000D–2000D.

7. The abrasion-resistant tubular sleeve of claim 1 wherein said second multifilament yarn comprises a textured multifilament yarn.

8. The abrasion-resistant tubular sleeve of claim 7 wherein said second multifilament yarn is selected from the group consisting of a polyamide yarn, a polyester yarn, a Nomex[®]/Basofil[®] blend yarn and a stainless steel/polyester blend yarn.

9. The abrasion-resistant tubular sleeve of claim 8 wherein said second multifilament yarn comprises a Nylon 6/6 yarn having a denier of in the range of about 100D-400D.

10. The abrasion-resistant tubular sleeve of claim 1 further comprising a set of placed warps including a plurality of third multifilament yarns forming a lay-in stitch lap in said fabric cloth.

11. The abrasion-resistant tubular sleeve of claim 10 wherein said third multifilament yarn comprises a textured multifilament yarn.

12. The abrasion-resistant tubular sleeve of claim 11 wherein said third multifilament yarn is selected from the group consisting of a polyamide yarn, a polyester yarn, and a Nomex[®]/Basofil[®] blend yarn.

13. The abrasion-resistant tubular sleeve of claim 12 wherein said third multifilament yarn comprises a Nylon 6/6 yarn having a denier in the range of about 50D-400D.

14. The abrasion-resistant tubular sleeve of claim 1 further comprising a set of placed warps including a plurality of third yarns forming a lay-in stitch lap in said fabric, wherein said third yarn is a polyester over polyethylene terephthalate monofilament yarn.

15. The abrasion-resistant tubular sleeve of claim 1 wherein said monofilament yarn, said first multifilament yarn and said second multifilament yarn are treated with a flame-retardant composition to provide a self-extinguishing, no-burn-rate tubular sleeve.

16. An abrasion-resistant tubular sleeve comprising:
a Nylon 6/6 monofilament yarn having a diameter of about 10 mils forming a first weft in a fabric cloth;

a first Nylon 6/6 textured multifilament yarn having a denier of about 2000D forming a second weft in said fabric cloth; and

a set of knitted warps including a plurality of second Nylon 6/6 textured multifilament yarns having a denier of about 400D forming a chain stitch lap in said fabric cloth;

wherein said fabric cloth is heat set into a resilient tubular sleeve.

17. The abrasion-resistant tubular sleeve of claim 16 further comprising a set of placed warps including a plurality of third Nylon 6/6 textured multifilament yarns having a denier of about 100D forming a lay-in stitch lap in said fabric cloth.

18. The abrasion-resistant tubular sleeve of claim 16 wherein said Nylon 6/6 monofilament yarn includes a inner core of Nylon 6/6 and an outer shell of a polyester.

20. A flame-retardant, abrasion-resistant tubular sleeve comprising:

a flame-retardant polyethylene terephthalate monofilament yarn having a diameter of about 10 mils forming a first weft in a fabric cloth;

a flame-retardant polyester textured multifilament yarn having a denier of about 2000D forming a second weft in said fabric cloth; and

a set of knitted warps including a plurality of second flame-retardant polyester textured multifilament yarns having a denier of about 400D forming a chain stitch lap in said fabric cloth;

wherein said fabric cloth is heat set into a resilient tubular sleeve.

21. The flame-retardant, abrasion-resistant tubular sleeve of claim 20 further comprising a set of placed warps including a plurality of third flame-retardant polyester textured multifilament yarns having a denier of about 100D forming a lay-in stitch lap in said fabric cloth.

22. A high-temperature, abrasion-resistant tubular sleeve comprising:

- a polyphenylene sulfide monofilament yarn having a diameter of about 10 mils forming a first weft in a fabric cloth;
- a first Nomex[®]/Basofil[®] textured blend multifilament yarn having a denier of about 2000D forming a second weft in said fabric cloth; and
- a set of knitted warps including a plurality of second Nomex[®]/Basofil[®] textured blend multifilament yarns having a denier of about 400D forming a chain stitch lap in said fabric cloth;

wherein said fabric cloth is heat set into a resilient tubular sleeve.

23. The high-temperature, abrasion-resistant tubular sleeve of claim 22 further comprising a set of placed warps including a plurality of third Nomex[®]/Basofil[®] textured multifilament blend yarns having a denier of about 100D forming a lay-in stitch lap in said fabric cloth.

24. The high-temperature, abrasion-resistant tubular sleeve of claim 22 wherein said polyphenylene sulfide monofilament yarn is a polyphenylene sulfide with Teflon monofilament yarn.

25. A shielded, abrasion-resistant tubular sleeve comprising:

- a Nylon 6/6 monofilament yarn having a diameter of about 10 mils forming a first weft in a fabric cloth;
- a first stainless steel/polyester blend multifilament yarn having a denier of about 2000D forming a second weft in said fabric cloth; and
- a set of knitted warps including a plurality of stainless steel polyester blend multifilament yarns having a denier of about 400D forming a chain stitch lap in said fabric cloth;

wherein said fabric cloth is heat set into a resilient tubular sleeve.

26. The shielded, abrasion-resistant tubular sleeve of claim 25 further comprising a set of placed warps including a plurality of second polyester textured multifilament yarns having a denier of about 100D forming a lay-in stitch lap in said fabric cloth.

27. The shielded, abrasion-resistant tubular sleeve of claim 25 further comprising a set of placed warps including a plurality of polyester over polyethylene terephthalate monofilament yarns having a diameter of about 10 mils forming a lay-in stitch lap in said fabric cloth.

28. The shielded, abrasion-resistant tubular sleeve of claim 25 wherein said Nylon 6/6 monofilament yarn includes a inner core of Nylon 6/6 and an outer shell of polyester.

29. A method of forming an abrasion resistant tubular sleeve comprising:
preparing a fabric cloth by chain-stitching a first set of multifilament warps on a set of wefts including a monofilament weft and a multifilament weft;
positioning said fabric onto over a mandrel to form a tubular fabric sleeve;
and
resiliently setting said tubular fabric sleeve on said mandrel.

30. The method of claim 29 wherein resiliently setting said tubular fabric sleeve comprises heating and subsequently cooling said tubular fabric sleeve on said mandrel.

31. The method of claim 29 further comprising preparing said fabric cloth by lay-in stitching a second set of multifilament warps on said set of wefts.